United Nations E/CN.17/2006/5/Add.7

Economic and Social Council

Distr.: General
4 January 2006

Original: English

Commission on Sustainable Development
Fourteenth session
1-12 May 2006
Item 3 of the provisional agenda*
Thematic cluster for the implementation cycle 2006/2007

Discussion papers submitted by major groups

Note by the Secretariat

Addendum

Contribution by business and industry**

Contents

		Paragraphs	Page
	Introduction	1–7	2
I.	Summary	8–34	3
	A. Key energy issues	8–22	3
	B. Key climate change issues	23–28	6
	C. Key industrial development issues	29–34	7
II.	Energy for sustainable development	35–69	8
III.	Climate change	70–103	15
IV.	Industrial development and sustainable development	104–124	21

* E/CN.17/2006/1.
** The views and opinions expressed do not necessarily represent those of the United Nations.

06-20098 (E) 270106

Introduction*

1. In our view, a review of implementation and results of policies and initiatives relating to follow-up actions to the World Summit on Sustainable Development in the areas of energy, climate change and industrial development should be addressed in an integrated manner, with consideration of their environmental, economic and social aspects.

2. The international business community is deeply committed to supporting sustainable development and the United Nations millennium development process. In our view, this process encompasses a broad range of deliberations and treaties, many of which impact commercial activity and the business community. These include Agenda 21, the Johannesburg Plan of Implementation, decisions of the Commission on Sustainable Development, the United Nations Millennium Declaration and the Monterrey Consensus of the International Conference on Financing for Development. Implementation of these commitments by all sectors of society is essential, and although they are ambitious, making significant progress is attainable with the right priorities, adequate resources and framework conditions. Business is a key partner in these undertakings and has made progress in implementing environmental and sustainability policies and practices, and providing more efficient and sustainable processes, products and services.

3. The Secretary-General and the United Nations Development Programme (UNDP) Commission on the Private Sector have both recently underscored the critical importance of an engaged business community in addressing poverty eradication and global sustainability challenges. We believe that the consideration of industrial development provides an opportunity to learn from the achievements of business, to highlight synergies between industrial activity and sustainability, and to propose ways to encourage the sustainable growth of business sectors and activities in developing countries, including via supply chains and the development of new markets. Business believes that cleaner production, eco-efficiency, management systems, technological innovation and voluntary approaches and partnerships all offer opportunities for capacity-building in developing countries and for real progress towards sustainable development worldwide.

4. Energy underpins sustainable development and is necessary in every aspect of modern society. Energy is critical for commercial activity, economic growth and development, and is essential for meeting the sustainable development objectives of the World Summit. The challenge faced by society encompasses increasing demand for energy and the provision of adequate access to affordable energy while reducing environmental impacts, such as climate change, air pollution and other atmospheric emissions.

5. Business is actively engaged in providing, transporting and utilizing energy. Supply and use of energy have to be sustainable, accessible, reliable, and affordable. Business is committed to contributing to reliable access to energy at affordable prices with acceptable impacts. Further, businesses (as consumers of energy) are actively engaging in consuming energy more efficiently and in producing products that are more energy-efficient. Thus, the business community is ready to contribute its significant operational, technological and financial capacity to the development and implementation of sustainable energy policy.

* Prepared by Business Action for Energy, the International Chamber of Commerce and the World Business Council for Sustainable Development.

6. All countries face the challenges of mitigating and adapting to the potential impacts of climate change. Both developed and developing countries will have to pursue integrated and harmonious sustainable economic growth and climate change policies, recognizing that developing countries are particularly vulnerable to climate change. Business is convinced that the most economically feasible way to meet the long-term challenge of climate change will include the more widespread use of existing efficient and low-carbon technologies, and the development, commercialization and widespread dissemination of innovative technologies to help reduce greenhouse gas emissions.

7. Examples of business action and further information are available from the relevant websites including www.businessaction.org, www.iccwbo.org, and www.wbcsd.org, www.worldenergy.org as well as websites of participants in Business Action for Energy.

I. Summary

A. Key energy issues

8. Access to reliable, affordable commercial energy provides the basis for heat, light, mobility, communications and agricultural and industrial capacity in modern society. Meeting society's needs, aspirations and expectations for a better life will require growing supplies of reliable, affordable energy. Indeed, business and industry themselves rely on energy in all phases of operations.

9. About 2.4 billion people rely on traditional biomass for cooking and 1.6 billion people do not have access to electricity. Furthermore, reliability of access and security of supply are essential to sustainable development in all parts of the world. From a social perspective, energy is essential to supporting and enhancing human development by improving the provision of health care, food, education and environmental sustainability.

10. *Energy for economic growth and development.* Business is actively committed to contributing to reliable access to energy at affordable prices with acceptable impacts. Further, businesses, as consumers of energy, are actively engaging in consuming energy more efficiently and in producing products that are more energy-efficient. Engaging with both locally investing businesses and their significant operational, technological and financial capacity in energy policy development and implementation is essential for sustainable delivery and consumption of energy.

11. *Enabling frameworks.* These include:

- Transparent and stable economic and uniformly enforced regulatory systems based on sound science, risk management and cost/benefit analysis
- Rule of law
- Protection of intellectual property
- Safe and stable communities
- Free markets
- Efficient financial markets
- Effective and innovative financing schemes

These frameworks, when provided by Governments, will support business investments in the energy sector, thereby allowing them to benefit from local and foreign direct investment (FDI).

12. *Open markets and innovative financing*. Open free markets provide the best conditions for investment in and provision of energy. Governments should also promote and enable investments in energy by leveraging official development assistance (ODA), promoting technological cooperation and exploring other innovative arrangements that would prioritize and support energy for sustainable development. In countries with limited capital, specifically least developed countries, the role of FDI should be complemented by intergovernmental organization funding (World Bank, Global Environment Facility (GEF), United Nations Organizations, etc.), ODA and local private funds.

13. *Integrated policies*. Energy supply and use pose political challenges related to economic growth, security, employment, investment, climate change, environmental impacts and trade. Energy challenges should be addressed through integrated policies that also take into account:

- Development priorities and needs
- Social conditions and aspirations
- Trade rules
- Environmental policies including climate change, air/atmospheric pollution policies
- Adaptation options
- Vulnerability priorities
- Innovation opportunities
- Technology transfer policies (export, finance, removing trade barriers and intellectual property)
- Energy efficiency

14. *Managing and reducing environmental impacts*. The environmental impacts of energy use and production should be addressed in the context of other urgent priorities — energy security, economic development, climate change, quality of life and job creation and other environmental impacts — in the near and longer terms. Systems should be in place to fully evaluate and mitigate potential environmental and social impacts in planning and delivering energy services.

15. *Research, development and technology innovation*. Ongoing technological innovation may provide solutions to current challenges. All relevant stakeholders should allocate resources to research and development of new technologies. Businesses already dedicate substantial resources in technology advancement and the development of innovation. Business will also work with partners in defining mechanisms to identify, develop and transfer technologies aligned with national priorities and development strategies.

16. *Energy efficiency*. Energy efficiency is critical to any comprehensive sustainable energy strategy. Joint efforts by Governments and businesses are key to continuing the promotion and enhancement of energy efficiency along the value

chain. Energy efficiency provides many benefits to society. In particular, it decreases the consumption rate of energy thereby improving energy security. Further, energy efficiency reduces negative impacts in the supply and use of energy.

17. *Partnerships*. Governments, businesses and other key stakeholders need to work in partnerships for a sustainable energy future, including through energy-related type II partnerships as defined by the World Summit. Business will continue to play an important role in energy solutions, within its sphere of responsibility, in partnership with other stakeholders.

18. *Energy security*. Long-term energy security of supply is needed to ensure that energy can foster sustainable growth. This is especially crucial considering the increase foreseen in energy demand. Developing countries, which are predicted to generate the bulk of this increase in energy demand, are more and more concerned with the reliability and security of their own energy supply.

19. *Large investment base and energy infrastructure*. Maintaining and growing the energy supply required to meet future demand will require significant investment. Changes in energy systems can only occur slowly because of the large investment base and infrastructure, the long lifetime of installed capacity and the massive investments in equipment and infrastructure required to maintain and grow capacity. The International Energy Agency (IEA) (*World Energy Investment Outlook, 2003*) estimates that developing countries require investments of about $7.9 trillion out of a total $16 trillion until 2030 to expand and renew energy infrastructure. In developed countries, the main challenge lies in the gradual renewal of existing energy infrastructure. In addition, energy security concerns have to be addressed by establishing a broad-based energy mix taking into consideration regional constraints and specificities.

20. *Market-based mechanisms*. Market-oriented policies can complement other regulatory and policy approaches. However, subsidies should be avoided wherever possible. Where applied, they should not distort markets and should enable access to energy and promote sustainable development. Tax incentives, where appropriate, should promote energy for sustainable development. "Getting prices right" is a complex concept, which should in theory encompass and reflect social, environmental and economic aspects.

21. *Consumer behaviour*. Consumer understanding and reaction are key factors for success in addressing the energy challenge. The way consumers use energy and maximize the recovery of energy through, for example, recycling has the potential to impact significantly on the supply side, and businesses have an important role to play in this evolution.

22. *All energy sources*. Within the context of recognizing that ongoing technological innovation may provide solutions to current challenges, all energy sources should be considered options with respect to meeting increasing energy demand. Their evaluation should be based on their merits and relative attributes, while recognizing that each entails issues, barriers and opportunities including cost, performance, safety, primary resource depletion, energy security, reliability, land use, waste disposal, availability of required infrastructure and capacity, and emissions affecting local and regional air pollution and climate change.

B. Key climate change issues

23. *Climate change presents serious environment and economic risks* and should be addressed in an integrated manner with other global development priorities and policies, in particular energy for development.

24. Evolution in energy infrastructure, mix and utilization will have to occur along with the pursuit of goals of access to energy and reduced climate impacts.

25. While industrialized countries have contributed significantly to greenhouse gas emissions, emissions from large developing countries are increasing rapidly. Hence, *addressing climate change internationally will take the commitment of all major actors*.

26. *Business and industry have made significant contributions* to understanding and addressing climate change risks. In this regard:

- Strategic approaches to risk management have emerged in sectors particularly vulnerable to climate impacts
- Adaptation of business models and researching and development of new technological solutions are key priorities
- Platforms have been established for greater dialogue with government on key policy development and long-term framework issues
- Industry is undertaking proactive action in reducing emissions.

27. *Well-designed long-term policy frameworks* are essential to addressing the challenges of climate change. In this regard:

- Realistic long-term frameworks and cooperative approaches will ensure that both business and Governments can make investment and planning decisions that will help mitigate and enable adaptation to climate change
- Addressing climate change requires the commitment and participation of all major emitters
- Principles of fairness, equity and cost-effectiveness are crucially important, particularly for developing countries with their own economic development priorities
- Barriers to investment should be addressed and incentives created to promote diffusion of new and existing technologies
- Market mechanisms should be improved to maximize impact, reduce costs and avoid distortions in competition between companies and nations
- Rapid deployment of sustainable energy production and efficient end-use technologies, systems and practices is essential
- Transfer of technology between developed and developing countries should be promoted, while intellectual property rights are protected. Barriers to technology transfer should be identified and eliminated
- Consumer education and demand-side management policies will help provide consumers with options for energy-efficient products and services

- Substantial investment by government and business will be required. Investors and financiers need to be attracted to allocating capital to low-greenhouse gas infrastructure, products and services.

28. Business, government and civil society all have important roles to play in both the short and the long term.

C. Key industrial development issues

29. *Industrial development and economic development.* Economic development depends on industrial development in terms of both its pivotal contribution to economic growth — a key element of sustainable development — and its role in the structural transformation and diversification of a country's economy. Indeed, economic development and economic well-being of people are largely regarded as being synonymous with industrialization.

30. *A successful industrial base strengthens society.* Many parts of the business community are engaged in the process of industrial development, and many more depend upon it. As such, industrial development is clearly an essential component of the activities of society as a whole. Industrial development's substantial contribution to economic growth helps create a large part of the resources needed to finance public sector environmental protection and social development programmes, for example, through providing tax revenues to public authorities, and setting and enforcing scientific and risk-based regulations. Industrial development also contributes to the social and economic aspects of sustainable development through direct job creation and indirect employment effects via supply chain interactions with other sectors of the economy.

31. *Industrial development, good environmental practice and technological cooperation.* The use of environmental management systems and other management tools is well under way in many companies. Industrial development and society's environmental goals should be pursued in a harmonious manner. Waste minimization, pollution prevention and cleaner industrial production are key elements of continuous improvement and increased eco-efficiency in industrial operations.

32. *Industrial development, good corporate citizenship and reporting.* Companies practice good corporate citizenship by spreading good practices among customers and employees, suppliers and business associates, in areas such as labour, the environment and human rights, in the countries where they operate. There has been substantial growth in the number of principles, guidelines and codes produced for business by governmental and non-governmental organizations. In this regard, businesses regard economic, environmental and social reporting as one element of a continuous dialogue with stakeholders rather than as a stand-alone exercise.

33. *Industrial development enables business-to-business and cross-sectoral cooperation.* The internationalization of industry through supply chain relations, joint ventures and FDI as well as through locally grown businesses offers new opportunities to developing countries to participate in cross-border production networks and partnerships. In many cases, voluntary partnerships make good business sense, and business supports partnerships as constituting one of the most practical means of delivering sustainable development outcomes. Business and

others should work to create long-term partnerships for sustainable development, engaging respectfully and openly with communities around the world.

34. *Sustainable industrial development depends on enabling frameworks established by Governments*. Successful and sustainable industrial development is largely a function of a vibrant private sector operating in a conducive market-oriented framework. In this regard, conducive enabling frameworks are critical both for local business communities and for foreign investment. Further, cooperation between business and Governments, with understanding of their respective roles and responsibilities, is crucial.

II. Energy for sustainable development*

35. Business Action for Energy is a temporary platform of international and multisectoral business organizations, established to facilitate business input to the fourteenth and fifteenth sessions of the Commission on Sustainable Development on energy-related issues. The initiative aims to deliver common views among Business Action for Energy participants and complements individual, corporate, sector or other business positions and initiatives.

36. Founding organizations of Business Action for Energy are the International Chamber of Commerce, the World Business Council for Sustainable Development and the World Energy Council.

37. Participating organizations of Business Action for Energy to date are the International Aluminium Institute, the International Emissions Trading Association, the International Petroleum Industry Environmental Conservation Association, the Union of the Electricity Industry — EURELECTRIC, the World Coal Institute, the World LP Gas Association and the World Nuclear Association.

38. More details on Business Action for Energy can be found at www.businessaction.org.

Background

39. The Commission on Sustainable Development at its eight session discussed energy for sustainable development and identified five key issues/challenges, namely, access to energy and modern energy services, energy efficiency, renewable energy, advanced fossil fuel technologies, and energy and transport. At the same session, the Commission also highlighted overarching issues, including the need for research and development, capacity-building, technology transfer, information sharing and dissemination, mobilization of financial resources, making markets work effectively for sustainable development, and multi-stakeholder approaches and public participation.

40. The Water, Energy, Health, Agriculture, Biodiversity (WEHAB) strategy that emerged from the World Summit frames five priority areas in the context of sustainable development. It underlines the contribution of energy to many sustainable development objectives including water access and sanitation, health, agriculture and biodiversity and considers rural and peri-urban contexts.

* Prepared by Business Action for Energy.

41. The Johannesburg Plan of Implementation conclusions on energy set out the following key objectives:

- Provide access to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services and resources
- Integrate energy considerations, including energy efficiency, affordability and accessibility, into socio-economic programmes, especially into policies of major energy consuming sectors, and into the planning, operation and maintenance of long-lived energy consuming infrastructures
- Combine, as appropriate, the increased use of renewable energy resources, more efficient use of energy, greater reliance on advances in energy technology and the sustainable use of traditional energy resources.

42. Furthermore, the World Summit underlined the importance of efficient and pertinent implementation of energy policy through the joint efforts of business and Governments, each in its own sphere of responsibilities, through "public-private partnerships".

The current situation

43. Energy is a vital ingredient for growth and sustainable development, and for the vast majority of economic activities. Yet, the lack of access to energy hampers economic and social development in many regions and is an obstacle to the achievement of social, environmental and economic progress worldwide.

44. Energy is important for development, as is demonstrated in consumption trends, notably, the increase foreseen in energy demand; for example, the International Energy Agency estimates an increase therein of 60 percent by 2030 (*World Energy Outlook, 2002*). A complex mix of energy resources will be required to meet this increasing demand in order for a wide variety of energy needs to be fulfilled, while considering environmental and other constraints.

45. Diversified supply solutions will need to take into account local circumstances and priorities, according to their ability to deliver sustainable and reliable energy at a cost-effective and competitive price. Demand solutions include promoting the efficient use of energy and consumer education. Business will continue to play a role in energy solutions, within its sphere of responsibility, often in partnership with other stakeholders.

46. Lack of security of supply, environmental impacts and growing demand will necessitate continuous improvement of energy efficiency and technologies on both the demand and supply sides. In light of this, policymakers should consider and address access and affordability, social benefits and environmental constraints, together with policies' ability to contribute to economic growth and support security of supply.

47. In order to make modern energy services available to populations in developing and developed countries, Governments and businesses need to continue to keep all energy options open and develop, as appropriate, all primary energy supplies, fossil fuels, hydro-energy, nuclear and renewable options. The focus should be on providing adequate supplies of safe, reliable, affordable energy while increasing efficiency and reducing negative environmental impacts through

appropriate technologies and good practices, pursuant to recognizing that ongoing technological innovation may provide solutions to current challenges. Limitations should not be placed on technologies that can ultimately improve energy access and energy efficiency and reduce environmental impacts.

48. The development of reliable energy systems will require significant investment in the supply chain and in the final equipment. Present systems have been developed over many decades. To renew these systems and to develop new ones will require significant investment in all appropriate energy sources. This investment is estimated by the International Energy Agency to be US$ 16 trillion until 2030.

49. At present, the ability of business to deliver its full contribution to addressing energy challenges, including through technology, innovation and investment, is constrained by the absence of enabling frameworks. It is the responsibility of Governments — in transparent dialogue with civil society and business and industry — to establish these frameworks and signal continuity to the business community, thus reducing uncertainty and encouraging business investments in the energy sector.

50. Such enabling framework conditions will include consistent policies, open markets, good governance, sound regulation and due diligence. Energy regulations and policies should be non-discriminatory and based on sound science and risk management, and cost-effectiveness, and take into account long-term planning, investment cycles and time-horizons. Their implementation should stimulate open, fair and transparent competition, and encourage flexibility and innovation. Further, in order to allow energy markets to work efficiently and effectively, policies that distort price signals should be limited and, ideally, avoided.

51. Energy for sustainable development will depend on the more widespread use of existing efficient technologies as well as the development, commercialization and deployment of innovative technologies. Business is actively engaged in:

- Raising awareness and providing information
- Implementing energy efficiency improvements
- Lowering the carbon intensity of energy
- Developing and deploying new technologies.

52. Many companies are working to develop a range of potentially valuable technologies, including fuel cells, hydrogen production and distribution, integrated gas combined cycle power production, advanced techniques to explore for and recover oil and gas, nuclear, carbon capture and storage technologies (including enhanced oil recovery and enhanced coal bed methane), gasification technology (for coal and biomass, biofuels and synfuels), co-generation and renewable options.

53. On the demand side, new technologies provide enhanced services and more efficient use of energy including efficient electric motors with low inertia, low-consumption light bulbs, more efficient buildings with better insulation and advanced glazing, advanced transportation systems and hybrid vehicles.

54. Finally, new information technologies, integrated approaches and innovative energy services improve the overall management and operation of energy systems.

Global energy trends

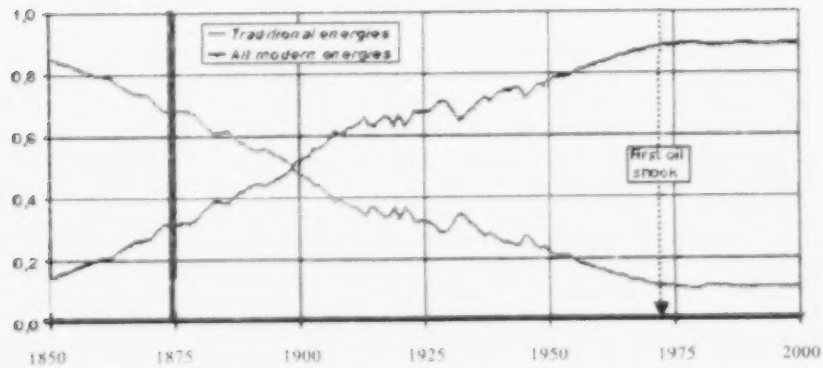
55. The energy challenge encompasses many different areas relating to demand (heat, habitat, industrial processes, transport, electricity) and to supply (availability and price of natural resources and structure of the energy system). Although this encompasses a myriad of activities, two cases suffice to illustrate the energy challenge, namely, access to modern energy services and transport.

Access to modern energy services

56. Access to modern energy services is a key ingredient in reducing poverty and providing essential services such as education and health care. Some 2.4 billion people do not have access to modern energy services and rely on traditional energy sources, which can entail health risks and impose a social burden.

57. While the use of traditional energy including wood, vegetable waste, animal materials and other solid biomass (see figure I below) has been significantly reduced over the last 150 years, this reduction has stalled in the past 25 years. If this continues, 1.4 billion people will still not have access to electricity by 2030 (*World Energy Outlook*). Lack of access to modern energy services is especially critical in parts of sub-Saharan Africa and South Asia, in particular rural areas.

Figure I
Market shares of primary energies, 1850-2000



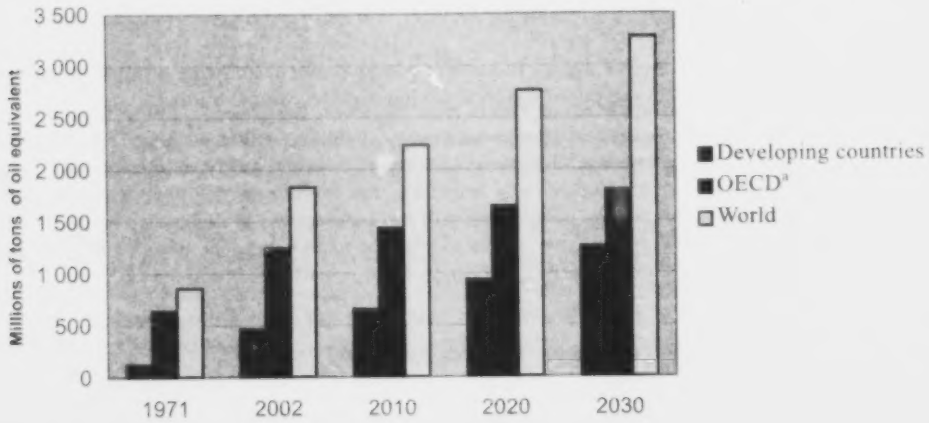
Source: O. Rech, Institute Français du Petrole.

58. Access to affordable modern energy services will contribute to poverty reduction by enabling other activities such as the development of small businesses, improved education, health benefits and access to modern technology. In order to overcome the aforementioned barrier, extensive investments in the energy infrastructure have to be made to overcome shortages.

Transport

59. Transport is another major energy challenge. Developing countries are in need of improved transport infrastructure and facilities in order to experience sustained economic growth and human development (see figure II).

Figure II
Energy consumption of the transport sector in different regions and the world, 1971-2030

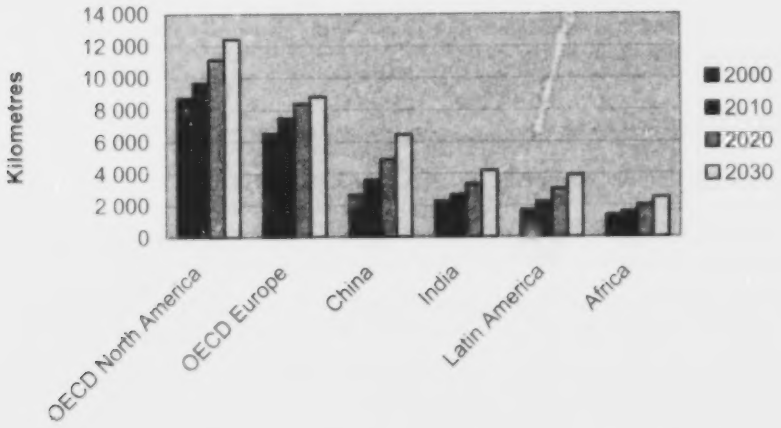


Source: IEA, *World Energy Outlook*, 2004.
[a] Organization for Economic Cooperation and Development.

60. A global challenge is to provide mobility options that satisfy consumer demand and safety requirements with low greenhouse gas emissions while addressing development priorities. To meet this global challenge, innovative solutions are needed. These could result from a portfolio of approaches, encompassing the various elements of the transportation system including fuels, vehicles, infrastructure and the role of mobility itself. Industry is investing in advanced fuel processing technologies that enable the production of more "environmentally friendly" clean transportation fuels for advanced-technology vehicles. Industry is also working with Governments and auto manufacturers on biofuels and with academia and Governments on advanced propulsion systems, fuels and other improvements such as lightweight materials.

61. Developing countries, despite having a larger combined population than Organization for Economic Cooperation and Development (OECD) countries, use significantly less energy in the transport sector through less travelling (see figure III). However, their consumption rate is predicted to rise significantly in the future as their economies develop further.

Figure III
Total passenger travel in different regions, 2000-2030



Source: World Business Council for Sustainable Development, Sustainability Mobility Project Model.

Links between energy and atmospheric/air pollution

62. The burning of traditional fuels in the home for cooking and heating is one source of air pollution. The burning of traditional fuels is the fourth greatest cause of death and disease in the world's poorest countries: 1.6 million people die from this annually, nearly 1 million of them being children.

63. With industrial development and urbanization, transportation, power production and industrial processes also make a significant contribution to air pollution. Combating air pollution is therefore a question both of access to cleaner energy and of the integration of environmental policy in the deployment of energy systems and in mobility options. Two elements have a crucial impact in combating air pollution:

(a) Technology choices that allow progressive and better deployment of modern available technologies;

(b) Innovation that can provide more efficient and cost-effective solutions adapted to each pollution source.

64. In the last decade, substantive progress has been made in terms of technology such as low-nitrogen oxides burners and boilers, low-nitrogen oxides engines, catalytic exhausts and particle filters for cars, low-sulphur fuels and gaseous fuels and clean coal technologies. These technologies, where implemented, have improved air quality.

65. Owing to the long lifetimes of energy infrastructure, careful choices at the time of investment, in conjunction with coherent long-term integrated policies, also need to be considered.

66. Further, combined efforts by all stakeholders — Governments, business and civil society — can achieve significant reductions of air pollution gases as the example of chlorofluorocarbons illustrates. Owing to the negative environmental effects of emissions of chlorofluorocarbons, production and consumption have been substantially reduced since the mid-1990s with plans to completely eliminate chlorofluorocarbons by 2010.

Specific experiences

67. Companies are continuing to take a proactive role in improving access to energy and its reliability in various developing countries. Many initiatives have been developed through partnerships, including with United Nations organizations, international institutions and local governments. Examples include:

- Eskom: Electrification programme (South Africa). Eskom has connected 3.2 million homes since the inception of the electrification programme in 1991
- World Liquid Petroleum Gas Association (WLPGA) UNDP LP Gas Rural Energy Challenge (South Africa, Morocco, Ghana, Honduras, Viet Nam and China). In South Africa alone, the partnership is targeting 3.5 million poor households
- Shell: Improving lives with the flick of a switch (Sri Lanka). Shell aims to provide solar energy to the 9 million people in Sri Lanka who do not have access to the electricity grid
- The Tenesol Total/EDF: Electrifying rural households Morocco
- World Energy Council: Solutions for Producing More Electricity, More Cost-Effectively. The Council's long-standing work (Performance of Generating Plant) in benchmarking power plant performance has resulted in measurable improvements and cost savings for power plant operators worldwide
- FUTUREGEN: The project is aimed at constructing and operating a 275 megawatt integrated sequestration and hydrogen production power plant, which will be able to supply about 275,000 households with clean energy
- Businesses, such as Statoil (in the North Sea), are undertaking several projects that make use of carbon capture and storage technology, avoiding the release of 1 million tons of carbon dioxide per year
- The Hydro Utsira Project in Norway is the world's first full-scale combined wind power and hydrogen plant, and a landmark in the development of renewable energy systems based on hydrogen
- Suez Energy International is investing US$ 250 million in a hydropower plant in Brazil that will guarantee the delivery of 147 megawatts into the electricity system and provide up to 1 million people with electricity
- BP has launched a $350 million five-year energy efficiency improvement plan and has saved in its first full implementation year about 6 million gigajoules or 400,000 tons of greenhouse gas emissions
- Gaz de France and four public sector undertakings successfully brought liquefied natural gas to India through the development of Dahej terminal,

which is currently supplying 10 million standard cubic metres per day of regasified liquefied natural gas.

- The Nuclear Power 2010 programme is an effort to identify sites for new nuclear power plants, to develop and bring to the market advanced nuclear plant technologies and to reduce the technical, regulatory and institutional barriers to deployment of new nuclear power plants in the United States of America.
- The aluminium industry has a voluntary objective of achieving a 10 per cent reduction in smelting energy usage per ton of aluminium produced by 2010 versus 1990. Good practice and investment in modern technology contributed to a 6 per cent drop in smelting energy use per ton of aluminium between 1990 and 2004.

68. Industry is working to promote energy conservation in both operations and "beyond the fence" through partnership with other sectors. Further examples and information is available from the Business Action for Energy website at www.businessaction.org which also includes links to all Business Action for Energy participants' websites.

Issues that should be brought to the attention of the Council for Sustainable Development for further consideration

69. From the above analysis, four main areas require urgent attention:

- Establishment of enabling frameworks for investment including those that facilitate the deployment of efficient technologies
- Promotion of integrated policies
- Improvement of funding and investment
- Development of efficient collaborative structures through, for example, partnerships.

III. Climate change*

Introduction

70. Business recognizes that climate change presents risks of serious environmental and economic consequences. Addressing these risks is clearly a high-priority, long-term concern for Governments and business. While debate continues as to the magnitude and timing of the potential impacts of climate change, businesses are taking actions to reduce emissions and to research, develop and disseminate new and existing technologies.

* Prepared by the World Business Council for Sustainable Development and the International Chamber of Commerce. More details can be found at the following websites: www.wbcsd.org and www.iccwbo.org.

Climate change and economic development

71. Climate change is one of several interrelated challenges facing the world, alongside economic development, energy production and use, land use, population growth, poverty reduction, sustainable development and the provision of clean drinking water. Climate change policies should be considered in the context of addressing other global development themes and priorities as highlighted throughout other sections of this document.

72. Energy is the single most important engine of growth and prosperity. In particular, the world response to climate change should be assessed in the context of meeting growing demand for energy in a world where nearly 2 billion people today are without access to the essential benefits of commercial energy and, as such, hindered from rising above poverty to pursue economic and social development.

73. Decisions need to be taken now on the substantial investments necessary to secure energy supply and distribution: uncertainty already affects investment plans, costs and outcomes. Choices made by Governments, businesses and policymakers now and in the future possess the potential to alter competitiveness and future investment and employment trends as well as the ability to respond to future environmental concerns.

74. The crucial task ahead is to establish effective long-term frameworks within which to address climate change and to adapt to its potential impacts. Efforts to address climate change will inevitably affect economies, lifestyles and development pathways. With such potential for far-reaching and fundamental consequences, the international community must find effective ways to engage all emitting countries and regions in such efforts, while making use of all energy options for meeting the growing demand.

What changes are required?

75. It is particularly important to recognize that there is no single approach to meeting the challenge of climate change. A broad portfolio of solutions will be required that should include:

- the development and global utilization of both existing and new cost-effective, efficient energy technologies with low greenhouse gas emissions in all sectors. This is the most effective way to improve access to energy, to promote energy efficiency and to reduce greenhouse gas emissions. This can best be facilitated through a variety of approaches including research and development incentives, voluntary initiatives, market-oriented measures, and steps to promote technology transfer and eliminate existing barriers that inhibit more widespread use and transfer of existing efficient technology

- consideration of the fact that evolution of the world's energy systems will be at the core of efforts to reduce greenhouse gas emissions. All primary energy resources will need to be considered, and existing and new technologies will be directed to more efficient and less greenhouse gas emitting performance. This will involve widespread implementation of energy efficiency and a broad mix of energy sources including cleaner fossil fuels, nuclear power, hydropower and renewables as well as the development of sequestration

approaches, including land-use changes, afforestation, and carbon capture and storage

- consideration of the fact that action is required from all major contributors to greenhouse gas emissions at the country, business, industry sector and community levels

- while industrialized countries have been primarily responsible for greenhouse gas emissions over the last century, emissions from large developing countries such as China, India, Brazil and the Republic of Korea are increasing rapidly. Hence, in order to succeed, addressing climate change internationally will require the commitment of all major actors.

Time frames

76. These processes of evolution will undoubtedly take time. Yet, there are many actions that can be implemented without delay to reduce greenhouse gas emissions, including stimulating energy efficiency and energy conservation and enhancing the contribution of renewable energy sources and non-emitting technologies. Additional efforts to raise awareness and build capacity and measures that promote diffusion of innovation-and-technology research and development are also needed now to address this long-term challenge.

77. The long-term view recognizes the necessity of coordinated, coherent, transparent global approaches that work towards emission reduction objectives in tandem with energy availability, growth and development. An early and open dialogue with key players will help inform this process.

Contribution of business

78. Business and industry have made significant contributions to understanding climate change risks and are engaged at national and international levels in this dynamic, complex and pressing debate. Business brings a variety of practicable contributions to the responses to climate change.

79. Through research and analysis of emerging risks and opportunities, business has helped to raise awareness and clarify understanding of the issues and challenges that lie ahead and their magnitude. Strategic approaches to climate risk management are emerging in sectors such as the insurance and energy supply industries. This trend is expanding to other sectors such as agriculture, heavy industry and manufacturing.

80. Industry has gained important experience and results have already been achieved in curtailing emissions growth and investing in the technologies upon which the world will rely to reduce emissions.

81. The business community is also taking further steps by adapting its own thinking and business models and researching and developing new technological solutions. Examples include energy-efficient technologies such as hydrogen fuel cells and solutions for carbon capture and storage.

82. Business is also actively involved in creating platforms and participating in dialogue with Governments and other stakeholders in relation to key policy

development issues. In doing so, business brings pragmatic commercial perspectives and considerable technological and management expertise to the climate change debate.

83. Numerous specific examples can be found on the respective websites of the World Business Council for Sustainable Development (www.wbcsd.org) and the International Chamber of Commerce (www.iccwbo.org).

Long-term policy frameworks

84. Climate policies should be based upon sound scientific analyses and realistic expectations regarding the pace of technological innovation and deployment. Such objectives should also acknowledge current limitations associated with the evolution of climate science and risk assessment. These objectives should be pursued through equitable cost-effective cooperative frameworks for government, business and society and aligned with the economic and social growth priorities of developed and developing countries.

85. Achieving these objectives is far from easy, but certain conditions are necessary to enable business to play its part. Enabling framework conditions and longer-term time frames are necessary for the purpose of supporting effective participation of Governments and the business community.

86. Long-term international climate frameworks may improve the ability of business to shape programmes and direct research and development efforts. They should be defined considering the essential need to engage all parties in credible, flexible, realistic long-term approaches and policies that will evolve based on growing experience and knowledge.

87. In particular, such frameworks should be responsive to scientific and technical research, the course of investment pathways that promote environmental, social and economic development, and public policy decisions in national and international forums.

88. Framework conditions should be aligned with other long-term international policy objectives such as economic development and trade. Many business and investment decisions, particularly in energy and industrial sectors, are considered over long time-horizons (for example, 20-50 years). Investment decisions that are taken now, for example, in new infrastructure, will effectively set emission pathways for many years.

Wide participation

89. To succeed, addressing climate change internationally will take the commitment of all major actors. An early and open dialogue with key players should pursue fairness, equity and cost-effectiveness and should engage large developing economies.

90. In addition to the efforts under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, business welcomes several complementary approaches that address the challenge and stress the role of technology in bringing solutions to bear. One example is the G8 climate initiative,

which brings in other important institutions, like the World Bank. Other notable examples include the newly formed Asia-Pacific Clean Development Partnership and bilateral agreements such as the European Union (EU)-China initiative.

91. We believe that international climate cooperation should address climate change risks in the context of advancing cleaner development in developed and developing countries, while recognizing that, in developing countries, priorities include economic development, and poverty and disease eradication, which are underpinned by enhanced access to basic services such as energy, health care and education.

Use of market-based mechanisms and instruments

92. Barriers to investment should be removed and incentives created for channelling capital so as to promote the use of new and existing technologies. Well-designed market-based mechanisms provide flexibility to business managers in cost-effectively sourcing, securing and allocating capital to projects, infrastructure, technologies and investments.

93. Properly designed, implemented and interlinked emissions trading systems have the potential to enable companies operating in countries with emission reduction commitments to meet them at least cost. Combining and linking these schemes through mutual recognition would be important for global businesses seeking out opportunities to offset emissions and invest in greenhouse gas reduction projects while avoiding distortions to competitiveness.

94. Functioning market-based mechanisms such as emissions trading, the Clean Development Mechanism and Joint Implementation are potentially important vehicles for addressing the challenges of climate change. The efficiency, workability and transparency of such mechanisms should be further demonstrated.

Promotion of technological innovation and commitment to research and development

95. Technological development and deployment will be essential in achieving greenhouse gas reductions and encouraging better living standards in both developing and developed countries. Rapid deployment of sustainable energy production and efficient end-use technologies, systems and practices is essential. Incentives should promote favourable environments for research, its conversion into practical innovations and their wide dissemination.

96. It is essential to establish efficient enabling frameworks to promote the transfer of technology between developed and developing countries, while protecting intellectual property rights. Barriers to technology transfer should be identified and eliminated.

97. Policies driving technological innovation and an expansion of research and development programmes are vital and should be open to all technology options. Long-term commitments of the private sector in developing new emission reduction technologies will depend on the provision of appropriate frameworks and incentives by Governments. Research and development are an essential tool for driving

innovation and energy-efficiency improvements and, in order to have maximum impact, must start now to promote the opportunity to achieve advances over the shortest possible time period.

Consumer choices

98. Consumer behaviour will benefit from increased awareness, education and access to transparent information. Actions are required now to provide consumers with more options for access to energy-efficient products and services.

99. Educational tools and product certification programmes should alert consumers to the benefits of lower-impact products and services at the point of sale. This will become particularly important in expanding developing economies with emerging wealthy middle classes. Policymakers need to recognize and integrate the influence that consumers bring to a competitive marketplace.

Engaging the capital markets

100. Substantial investment by government and business will be required to achieve the required outcomes. Investors and financiers need to be attracted to allocating capital to infrastructure, products and services that promote greenhouse gas reduction, sequestration and adaptation. The drawing together of integrated policy interventions and trading systems will succeed only if this sends political and market signals that engage capital markets.

Concluding messages

101. The World Business Council for Sustainable Development and the International Chamber of Commerce are committed to engaging in the climate debate with respect to informing policy processes worldwide.

102. This challenge will require business, government and civil society to play their roles in both the short and the long term. In the short term, the promotion of eco-efficiency, technology transfer and deployment and conservation are all mutually reinforcing and necessary elements. Further dialogue will also be needed between key contributors in relation to long-term policy frameworks, initiatives and partnerships.

103. Business is engaged as a key partner in this process and is taking action. To support this, Governments should establish and implement long-term frameworks that put in place supportive business and investment conditions. Research and development should be stimulated to develop and commercialize innovative, affordable and reliable, low-greenhouse gas technologies sooner; and regulatory barriers to the development, utilization and deployment of technology should be eliminated. Long-term frameworks facilitate the involvement of business in new projects and initiatives that contribute to the overall objective of combating climate change.

IV. Industrial development and sustainable development*

104. The fact that the present section is the last does not diminish the importance of its subject, since industrial development entails an overarching set of issues that impinge on energy for development and climate, and encompasses an encouraging record of progress and achievement by businesses of many sectors, sizes and nationalities.

105. The fact that the business sectors involved in industrial development are diverse in size and sector, and will vary country by country, makes it difficult to generalize about industrial development. Moreover, even if industrial development is regarded as one sector of the broader business community, many other sectors (such as agriculture, retail and others) depend on it, and as such it is central to commercial activity and sustainable development in:

- Creating jobs and contributing to capacity-building
- Building and maintaining infrastructure (important for energy)
- Growing new opportunities for economic growth at local and regional levels
- Promulgating accountable and transparent environmental and other management systems, cleaner production and eco-efficiency
- Generating resources needed to finance social needs, for example, tax revenues to public authorities
- Providing goods and services at competitive prices
- Sharing good practices
- Engendering technological innovation and cooperation.

106. Increasingly, business communities in many developing countries and emerging economies are crucial actors in industrial development, with great potential for making progress in economic, social and environmental spheres. The value chains of large, medium-sized and small companies in the context of industrial development provide many opportunities for alliances and partnerships to promote sustainability.

107. Industrial development makes its greatest contribution to sustainable development in the context of sound enforced regulation and good governance that relies to the extent possible on sound science, risk management, the market and voluntary approaches that supplement legal requirements. Creating an enabling environment within which enterprises of all sizes and sectors can develop, create jobs, and pursue technological innovation and cooperation, coupled with sound governance and policies to reduce barriers to international trade and FDI, traces a significant route out of poverty. Greater economic integration and the fostering of trade and investment relationships can also increase regional stability, thereby making an important contribution to global peace and security.

108. Governments should establish framework conditions for fostering transparency and promoting sharing of responsibility among stakeholders. All parts of society share the responsibility for progress towards sustainability. Business has an

* Prepared by the International Chamber of Commerce and the World Business Council for Sustainable Development.

important part to play in the context of sustainable industrial development, but there is also a need for Governments and civil society to play their part.

109. The roles and activities of businesses often go well beyond the immediate workplace, marketplace and supply chain. Sustainability is often not limited to areas within a company's boundaries, such as manufacturing and plant management, and can be valid for activities upstream and downstream of a manufacturer's plant, potentially involving supply and product value-chains, and via joint venture partners, suppliers and contractors.

110. In this regard, voluntary partnerships make good business sense, and business supports partnerships as a practical tailored means of delivering sustainable development outcomes. The true measure of the business contribution to partnerships is the results achieved. Business engages in partnerships where there is a sound business case and potential for delivering benefits for all partners. Such partnerships are more likely to be sustainable and achieve tangible results.

111. The immense value of *local partnerships* and their contribution to achieving sustainable development in the context of industrial development in communities around the world should be recognized. All business operations are ultimately "local" — with local markets and customers, employees and managers, communities and neighbours. Business will continue to work to create long-term partnerships for sustainable development, engaging respectfully and openly with communities around the world.

112. Eco-efficiency and cleaner production are among several approaches to business sustainability relevant to industrial development with a similar objective: managing and reducing environmental impacts, and making business operations and economies more sustainable. Eco-efficiency and concepts like it encourage business to achieve more value from lower inputs of materials and energy and with reduced emissions. These concepts relate to companies of all sizes, and to all sectors in developed and developing countries.

113. Business uses a number of tools to implement such concepts, including International Organization for Standardization (ISO) 14000 environmental management systems, environment health and safety auditing, the Business Charter for Sustainable Development of the International Chamber of Commerce and other sectoral and business codes (such as Responsible Care).

114. Since the United Nations Conference on Environment and Development, there has been a proliferation of voluntary principles, guidelines and codes produced by individual companies and business groups, as well as for business by governmental and non-governmental organizations. Companies face multiple and sometimes conflicting demands to endorse these initiatives.

115. Companies throughout the world face widely differing conditions in the various countries in which they operate. Moreover, many companies engage in international activities directly or indirectly through purchasing and contracting. Principles, initiatives, guidelines and practices are obliged to be sufficiently flexible to reflect the diversity of firms as well as that of their suppliers and business partners.

116. A "one size fits all" approach is incompatible with the great diversity that exists within business. Indeed, the great variety of principles and other voluntary initiatives of individual companies attest to this diversity, and should be encouraged.

117. Studies have shown that companies practice good corporate citizenship by spreading good practices among customers and employees, suppliers and business associates, in areas such as labour, the environment and human rights, in countries where they operate. Responsible long-term-oriented entrepreneurship is the driving force for sustainable economic development and for providing the managerial, technical and financial resources needed to meet social and environmental challenges.

118. One important way for companies to convey commitment to responsible business conduct is to communicate timely and reliable information on their economic, environmental and social performance. Since the late 1980s, companies have been developing their reporting practices on non-financial indicators, starting with environmental reporting. A relatively small but growing number of companies are now regularly providing documented information on the economic, environmental and social impacts of their activities, usually in the form of a yearly report or as part of their traditional financial reports.

119. Reporting is only one part of the broader issue of communication with stakeholders and the public. Businesses regard economic, environmental and social reporting as one element of a continuous dialogue with stakeholders rather than as a stand-alone exercise.

120. The key challenge for companies engaged in industrial development is to develop a balanced approach to economic, environmental and social management and practice, which meets their needs and those of their customers, employees, shareholders and other stakeholders in the most effective way, leveraging their core competencies to address specific issues related to their activities.

Examples

121. The International Chamber of Commerce, UNDP and the International Business Leaders Forum are now accepting nominations for the World Business Awards in support of the Millennium Development Goals established to honour corporate contributions to local, national or global efforts to end poverty and hunger and to foster truly sustainable development.

122. The 2006 World Business Awards are the first business awards worldwide to recognize the significant role business can and does play in the implementation of the Millennium Development Goals. Every business entity, including associations, confederations and individual businesses of any size and from any country, is eligible for the Award. The World Business Awards will be presented at a ceremony to be held during the fourteenth session of the Commission on Sustainable Development in May 2006. Finalists will receive worldwide recognition for their projects and will be listed on websites and in publications of the three organizations.

123. The World Business Council for Sustainable Development has launched six sector projects to address some of the most difficult dilemmas in particular industries (cement, mining/minerals, electrical utilities, paper, mobility).

124. The World Business Council for Sustainable Development sector projects harness independent research and stakeholder consultations to determine how a particular industry can better align its practices and policies with the requirements of sustainability. Stakeholder-related activities aim at enhancing the legitimacy of the respective sector's actions to promote sustainable development, with an assurance group guaranteeing the neutrality and validity of the findings.